

USPN: 09/732,123
Atty. Docket: 10242
Amdt. Dated November 24, 2003
Reply to Office Action mailed June 24, 2003

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Currently Amended): A plasma-treated thermoplastic, open-celled, porous polymeric film layer, wherein said film layer has a pore volume fraction of at least 0.40 and said film layer has been treated with plasma to make the pore space thereof more hydrophilic and to provide said film layer with the following properties: (a) a receding contact angle for water of less than 35° and (b) a pore accessibility for water of at least 0.60, and further wherein said film layer has been treated with plasma by a method comprising the simultaneous steps of:

(a) passing said film between two electrodes, wherein one of said electrodes is a plasma-generating electrode, which faces an outer surface of said film layer having exposed pores, and the other electrode is a plasma-attracting electrode, which is positioned adjacent to the opposite side of the film;

(b) operating said plasma-generating electrode under conditions sufficient to generate plasma; and

(c) operating said plasma-attracting electrode under conditions sufficient to draw plasma generated in step (b) into the pore space of said porous film layer.

wherein said plasma generating electrode is operated at a higher power or frequency than said plasma attracting electrode.

Claim 2 (Original): A monolayer film comprising the film layer of claim 1.

Claim 3 (Original): A multilayer film comprising a surface layer of the film layer according to claim 1.

Claim 4 (Previously Presented): A film layer according to claim 1, wherein the film layer

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comprises a polymeric matrix material and the polymer of the matrix material is a polyolefin selected from the group consisting of polypropylene, polyethylene, polybutylene and copolymers and blends thereof.

Claim 5 (Previously Presented): A film layer according to claim 1, wherein the film layer comprises a polymeric matrix material and the polymer of the matrix material is an isotactic polypropylene, containing at least about 80% by weight of isotactic polypropylene.

Claim 6 (Original): A film layer according to claim 1 having a receding contact angle for water of less than 10° , a pore volume fraction of at least 0.45, and a pore accessibility of at least 0.75.

Claim 7 (Withdrawn): A method for plasma-treating a porous thermoplastic polymeric film to make the pore space thereof more hydrophilic, wherein said film has at least one surface layer comprising exposed pores and having a pore volume fraction of at least 0.40, and wherein said method comprises the simultaneous steps of:

- (a) passing said film between two electrodes, wherein one of said electrodes is a plasma-generating electrode, which faces an outer surface of said film layer having exposed pores, and the other electrode is a plasma-attracting electrode, which is positioned adjacent to the opposite side of the film;
- (b) operating said plasma-generating electrode under conditions sufficient to generate plasma; and
- (c) operating said plasma-attracting electrode under conditions sufficient to draw plasma generated in step (b) into the pore space of said porous film layer,

wherein said plasma-treatment provides said porous film layer with (a) a receding contact angle for water of less than 35° and (b) a pore accessibility for water of at least 0.60, and said plasma generating electrode is operated at a higher power or frequency than said plasma attracting electrode.

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Claim 8 (Withdrawn): A method according to claim 7, wherein said plasma attracting electrode is in the form of a roll, which is in physical contact with the film being plasma treated.

Claim 9 (Withdrawn): A method according to claim 8, wherein said roll is a cooling roll.

Claim 10 (Canceled).

Claim 11 (Withdrawn): A method according to claim 8, wherein said plasma generating electrode is operated at a frequency of from 5 MHz to 100 MHz, and said plasma attracting electrode is operated at a frequency of from 10 kHz to 500 kHz.